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NATIONAL WEATHER SERVICE INSTRUCTION 10-805
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Operations and Services

Aviation Weather Services, NWSPD 10-8

TRANSCRIBED WEATHER BROADCASTS

NOTICE: This publication is available at: http://www.nws.noaa.gov/directives/.

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SUMMARY OF REVISIONS: Supersedes NWSI 10-805, Transcribed Weather Broadcasts, dated February 26, 2004. Summary of changes include:

Added location KPNT as an anchor point for TWEB route 215.

Added location KBNO as an end point for TWEB route 376. This point is currently used; however, the location had been accidentally omitted until now.

Corrected TS weather location for TWEB example 063 on Winter Weather Scenario in section 7.

Changed wording on how to identify NIL AMD TWEB routes in Appendix B, section 3.1, TWEB example 041.

Changed the definition of TWEB Synopsis in section 4.f to facilitate NWS offices in the issuance of TWEB synopses.

//SIGNED// January 26, 2005
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Acting Director, Office of Climate, Water, and Weather Services

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1. Purpose. This instruction specifies procedures for preparing NWS Transcribed Weather Broadcast (TWEB) text products (Route and Local Vicinity forecasts). TWEBs are primarily used by Automated Flight Service Station (AFSS) briefers to provide local, detailed information to General Aviation (GA) pilots.

2. Background. Because of the volume of GA flights daily, it is not practical for GA to rely solely on person-to-person weather briefings. Weather information for initial flight planning, based on TWEBs, may be obtained by the pilot through continuous, recorded aviation weather information sources. These sources are an acceptable means of familiarizing pilots with general weather conditions.

3. General. The NWS Weather Forecast Office (WFO) responsible for preparing each TWEB is listed in Appendix A. The Meteorologist in Charge (MIC) for each NWS WFO with TWEB responsibility will ensure implementation and maintenance of the TWEB program. The MIC or their designee, (usually the Aviation Focal Point [AFP]) will regularly review TWEBs for quality and compliance with this instruction. Regional Meteorological Services Division (MSD) Chiefs or their designee (usually the Regional Aviation Meteorologist [RAM]) will also make periodic quality control checks of TWEBs. MICs, AFPs, MSD Chiefs, RAMs and forecasters are highly encouraged to listen to the TWEB broadcasts.

Since each Flight Service Station (FSS) may make their recordings in a different manner, each WFO should obtain the relevant recording information from their local FSS and post it on station for forecasters to occasionally monitor.

TWEBs should be as concise and current as possible to avoid confusing FAA Flight Service Specialists who use the TWEB in their briefings and recordings, and pilots who listen to the recordings.

MICs will forward requests for addition of new TWEBs or changes to existing TWEBs to the appropriate Regional Headquarters (RH) for action. RHs will transmit the request, along with recommendations, to the Office of Climate, Water, and Weather Services (OCWWS), NWS Headquarters (NWSH). If approved by NWSH, RH will submit a Data Review Group (DRG)

request and ensure administrative requirements are met. The DRG Change Management (DRGCM) will initiate action to include the new TWEB(s) in the FAA's Weather Message Switching Center Replacement (WMSCR) data base.

4. Definitions.

a. TWEB. NWS-prepared text product for the continental U.S., including synopsis and forecast for more than 200 routes and local vicinities.

b. Anchor Points. Intermediate and end points used to define the TWEB route. For example, MKETWB211 would have anchor points of KMKE, KMSN, KLSE, and KMSP. KMKE and KMSP are end points, while KMSN and KLSE are intermediate points along the route.

c. TWEB Route. A 50 nautical mile (nm) wide corridor (25 nm either side) along a line connecting the anchor points of the route, and a 25 nm radius semi-circle around the end points. Exceptions to the 50 nm wide corridor occur where larger, irregularly shaped areas are covered.

d. TWEB Route Forecast. Forecasts describing specific information on sustained surface winds (25 knots or greater), visibility, weather and obscuration to vision, sky conditions (coverage, ceiling/cloud heights, and cloud tops), mountain obscurement, and nonconvective low-level wind shear along a route during a 12-hour period. If visibility of 6 statute miles (SM) or less is forecast, obstructions to vision and/or weather will be included. Thunderstorms and volcanic ash will always be included regardless of visibility. An amended TWEB Route Forecast may be valid for less than a 12-hour period (see Appendix B, Section 4.2).

e. TWEB Local Vicinity Forecast. Aviation weather forecast valid for a 12-hour period and covering an area with a radius of 50 nm, which may contain several airports. An amended TWEB Local Vicinity Forecast may be valid for less than a 12-hour period (see Appendix B, Section 4.2).

f. TWEB Synopsis: A brief description of weather systems, such as fronts, high/low pressure centers, and upper air disturbances which will affect the TWEB routes and any area assigned to the respective NWS office issuing a synopsis.

5. Observational Requirements. Most TWEB routes have anchor points corresponding to surface observation and (usually) Terminal Aerodrome Forecast (TAF) locations. Data from these points may be unavailable for periods of time or for certain hours each day. The impact of the loss of this data varies from one part of the country to another due to topography, land and water distribution, daily weather, and the proximity of other observations to the route corridor. Consequently, there may be times or days during which very few observations are needed for preparing certain route forecasts and other times during which the loss of one element of an observation may be critical.

6. Record Retention. Locally-issued TWEBs will be retained in accordance with NWS Instruction 10-2003.

7. Examples. The following examples illustrate the procedures in this instruction. The plain language translations highlight the phrasing expected in the text message.

019 TWEB 242008 KNYC-KBID-KACK. ALL HGTS MSL EXC CIGS. 3-4SM BR CIGS OVC025...01Z 1-1 1/2SM -SHRA BR CIGS OVC010-015.

Forecast for TWEB route 019 valid until 08Z. Route 019 from New York City to Block Island to Nantucket. All heights above mean sea level except ceilings. Forecast until 01Z, visibility between three and four statute miles in mist, ceilings two thousand five hundred overcast. After 01Z, visibility between one and one-and-one-half statute miles in light rain showers and mist, ceilings between one thousand and one thousand five hundred overcast.

380 TWEB 120820 KSLC-KOGD-KRKS. ALL HGTS MSL EXC CIGS. P6SM FEW130-150. KOGD-KRKS 18Z P6SM FEW130-150 ISOLD SFC WND G45KT BLW 3SM TSRA CIGS OVC040CB.

Forecast for TWEB route 380 valid until 20Z. Route 380 from Salt Lake City to Ogden to Rock Springs. All heights above mean sea level except ceilings. Visibility greater than six statute miles. Few clouds between 13 thousand and 15 thousand. From Ogden to Rock Springs after 18Z, visibility greater than six statute miles, few clouds between 13 and 15 thousand, isolated surface winds gusting to 45 knots with visibility below three statute miles in thunderstorms and rain, ceilings four thousand overcast with cumulonimbus.

185 TWEB 121402 KAMA-KLBB-KMAF. ALL HGTS AGL EXC TOPS. P6SM SKC. KLBB-KMAF 23Z P6SM SKC LLWS.

Forecast for TWEB route 185 valid until 02Z. Route 185 from Amarillo to Lubbock to Midland. All heights above ground level except tops. Visibility greater than six statute miles. Sky clear. Between Lubbock and Midland after 23Z, visibility greater than six statute miles. Sky clear. Low Level Wind Shear.

061 TWEB 130820 KCLE LCL VCNTY. ALL HGTS AGL EXC TOPS. 3-4SM FZRA CIGS OVC010-015...12Z SFC WND 34025G35KT 0-1/2SM +SHSN CIGS OVC002-004.

Forecast for TWEB route 061 valid until 20Z. Route 061 for the Cleveland vicinity. All heights above ground level except tops. Until 12Z, visibility between three and four statute miles in moderate freezing rain. Ceilings between one thousand and one thousand five hundred overcast. After 12Z, surface winds 340 degrees at 25 knots gusting to 35 knots. Visibility between zero and one-half statute miles in heavy snow showers. Ceilings between two hundred and four hundred overcast.

232 TWEB 010820 KSTL-KCGI-KMEM. ALL HGTS AGL EXC TOPS. 3SM HZ SCT005-009 TOPS 015...17Z 3-4SM HZ SCT015 TOPS 025.

Forecast for TWEB route 232 valid until 20Z. Route 232 from St. Louis to Cape Girardeau to Memphis. All heights above ground level except tops. Until 17Z, visibility three statute miles in haze. Between five hundred and nine hundred scattered, tops one thousand five hundred. After 17Z, between three and four statute miles in haze. One thousand five hundred scattered, tops two thousand five hundred.

361 TWEB 131402 KSEA-KSMP-KELN. ALL HGTS MSL EXC CIGS. KSEA-20W KSMP P6SM SCT-BKN035 BKN070 TOPS 080 LCL BLW 3SM BR CIGS BKN001...18Z IMPR P6SM SCT030 SCT050...23Z P6SM SKC. 20W KSMP-KSMP-KELN SFC WND 28025G35KT P6SM BKN070 KSMP TOPS 080...19Z P6SM SKC.

Forecast for TWEB route 361 valid until 02Z. Route 361 from Seattle to Stampede Pass to Ellensburg. All heights mean sea level except ceilings. From Seattle to 20 miles west of Stampede Pass visibility greater than six statute miles, scattered to broken three thousand five hundred, seven thousand broken, tops eight thousand. Locally below three statute miles in mist, ceiling one hundred broken. By 18Z, improving to greater than six statute miles, three thousand scattered, five thousand scattered. After 23Z, visibility greater than six statute miles, sky clear. From 20 miles west of Stampede Pass through Stampede Pass to Ellensburg, surface wind from 280 at 25 knots gusting to 35 knots, visibility greater than six statute miles, seven thousand broken, tops eight thousand at Stampede Pass. After 19Z, visibility greater than six statute miles, sky clear.

BIS SYNS 250820. LOW PRES TROF WL MOV EWD ACRS ND BY 10Z. HI PRES WL MOV SEWD FM CANADA INTO NWRN ND BY 16Z.

Synopsis for area covered by TWEBs issued by WFO Bismarck valid until 20Z. Low pressure trough will move across North Dakota by 10Z this morning. High pressure will move southeastward from Canada into northwestern North Dakota by 16Z this afternoon.

Additional Examples Covering Various Weather Phenomena:

TWEB with IFR, FOG, SEVERE TS WIND GUSTS WITH TS, LLWS, AND ROUTE BROKEN INTO SECTIONS:

063 TWEB 131402 KCLE-KDTW. ALL HGTS AGL EXC TOPS. KCLE-KTOL P6SM BKN070 LCL BLW 3SM BR CIGS BLW BKN010...17Z SFC WND 22025G35KT P6SM CIGS BKN030 OVC050 SCT SFC WND G50KT 1SM TSRAGR CIGS OVC010CB...23Z P6SM CLR BLW 120 LLWS. KTOL-KDTW P6SM SKC.

MIST EXAMPLE:
061 TWEB 160214 KCLE LCL VCNTY. ALL HGTS AGL EXC TOPS. P6SM CLR BLW 120...09Z 4SM BR CLR BLW 120 LCL 2SM BR.

WINTER WEATHER SCENARIO:
063 TWEB 120820 KCLE-KDTW. ALL HGTS AGL EXC TOPS. 4SM -RA CIGS OVC030 AREAS 1-1 1/2SM -RASN CIGS OVC010...15Z SFC WND 30025G35KT 3SM TS -FZRA

CIGS OVC010CB SCT BLW 3SM -FZRASN CIGS BLW OVC010.

SNOW SCENARIO:

063 TWEB 220820 KCLE-KDTW. ALL HGTS AGL EXC TOPS. 3-4SM -SN BR CIGS OVC020 AREAS 1SM -SN BLSN CIGS OVC010...16Z 5SM BR CIGS BKN-OVC030 LCL 2SM -SN CIGS BKN-OVC010.

LAKE EFFECT SNOW AND DENSE FOG SCENARIO:

061 TWEB 122008 KCLE LCL VCNTY. ALL HGTS AGL EXC TOPS. P6SM BKN040 SCT BLW 3SM SHSN CIGS BLW BKN010...03Z P6SM SKC...06Z 4SM BR SKC LCL 1/2SM FG.

Appendix A - NWS WFO Responsibility for TWEBs

Aberdeen, WFO ABR

TWB256	KFSD-KHON-KBIS
TWB257	KFSD-KFAR

Albany, WFO ALY

TWB014	KBTV-KALB-KNYC
TWB015	KALB-KSYR
TWB016	KALB-KBGM-KELM

Albuquerque, WFO ABX

TWB193	KABQ-KGUP
TWB197	KABQ-KFMN
TWB198	KABQ-KLVS-KTAD

Amarillo, WFO AMA

TWB164	KICT-KAMA
TWB184	KGCK-KAMA
TWB186	KAMA-KTAD
TWB192	KABQ-KAMA

Atlanta, WFO FFC

TWB103	KATL-KMCN-KJAX
TWB109	KCSG LCL VCNTY

Baltimore/Washington, DC, WFO LWX

TWB032	KDCA/KBWI LCL VCNTY
TWB035	KDCA-KCRW

Billings, WFO BYZ

TWB289	KCPR-KSHR-KBIL
TWB328	KBIL-KLVM-KBZN-KBTM
TWB329	KMLS-KBIL-KLWT-KGTF

Bismarck, WFO BIS

TWB249	KISN-KMOT-KGFK
TWB252	KBIS-KMLS
TWB253	KBIS-KISN
TWB254	KBIS-KMOT
TWBSYN	SYNOPSIS

Boise, WFO BOI

TWB346	KBOI-KEKO

TWB348	KBOI-KSMN
TWB365	KPDT-KBKE-KBOI
TWB369	KRDM-KBNO-KBOI
TWBBOI	SYNOPSIS

Boston, WFO BOX

TWB005	KBOS LCL VCNTY
TWB008	KBOS-KALB
TWB009	KBOS-KBDL-KNYC
TWB010	KBOS-KHYA-KACK

Buffalo, WFO BUF

TWB058	KBUF-KERI-KCLE
TWB071	KPIT-KBFD-KBUF

Burlington, WFO BTV

TWB007	KBOS-KLEB-KBTV
TWB013	KBTV-KMSS-KART-KSYR

Caribou, WFO CAR

TWB001	KPWM-KBGR-KCAR
TWB003	KBTV-KBGR

Central Illinois, WFO ILX

TWB215	KCHI-KPNT-KSPI-KSTL

Central Pennsylvania, WFO CTP

TWB026	KHAR LCL VCNTY
TWB029	KHAR-KIPT-KELM

Cheyenne, WFO CYS

TWB286	KCPR-KDGW-KBFF
TWB287	KCPR-KDGW-KCYS
TWB292	KRKS-KRWL-KLAR-KCYS
TWBSYN	SYNOPSIS

Cleveland, WFO CLE

TWB061	KCLE LCL VCNTY
TWB063	KCLE-KDTW
TWBSYN	SYNOPSIS

Denver/Boulder, WFO DEN

TWB279	KDEN-KLAR
TWB280	KDEN-KCYS
TWB306	KDEN LCL VCNTY EXC MTS
TWBSYN	SYNOPSIS

Des Moines, WFO DMX

TWB239	KMKC-KDSM-KMCW
TWB240	KOMA-KDSM-KMLI
TWB297	KIRK-KDSM-KFSD
TWB304	KDSM LCL VCNTY
TWBSYN	SYNOPSIS

Dodge City, WFO DDC

TWB270	KICT-KGCK

Duluth, WFO DLH

TWB246	KDLH LCL VCNTY
TWB248	KDLH-KINL-KGFK

Eastern North Dakota, WFO FGF

TWB245	KMSP-KAXN-KFAR
TWB247	KDLH-KFAR
TWB250	KFAR-KGFK-CYWG
TWB251	KBIS-KFAR

Elko, WFO LKN

TWB383	KSLC-KENV-KEKO
TWB404	KRNO-KLOL-KEKO
TWB406	KLAS-KELY-KEKO

El Paso, WFO EPZ

TWB195	KABQ-KTCS-KELP
TWB196	KELP-KTUS

Eureka, WFO EKA

TWB375	KACV-KMFR
TWB416	KRDD-KACV
TWB420	KOAK-KACV

Flagstaff, WFO FGZ

TWB389	KPHX-KINW-KFMN
TWB390	KPRC-KGCN-KBCE
TWB391	KPRC-KFLG-KINW-KGUP
TWB398	KLAS-KGCN-KFMN
TWB399	KPHX-KFLG

Gaylord, WFO APX

TWB204	KPLN-KTVC-KMBS
TWB307	KMBS-KPLN

Glasgow, WFO GGW

TWB330	KGTF-KHVR-KGGW-KISN

Goodland, WFO GLD

TWB263	KLBF-KGLD
TWB273	KGCK-KGLD
TWB275	KDEN-KGLD
TWB314	KSLN-KGLD

Grand Junction, WFO GJT

TWB278	KDEN-KEGE-KGJT
TWB281	KGJT-KRKS
TWB283	KGJT-KFMN

Grand Rapids, WFO GRR

TWB205	KTVC-KMKG-KSBN

Great Falls, WFO TFX

TWB331	KGTF-KHLN-KBTM-KDLN-KIDA
TWB332	KGTF-KMSO
TWB333	KGTF-KCTB-KFCA
TWBTFX	SYNOPSIS

Green Bay. WFO GRB

TWB212	KMKE-KAUW-KDLH

Hanford, WFO HNX

TWB421	KSJC-KBFL
TWB423	KSCK-KFAT-KBFL

Hastings, WFO GID

TWB261	KOMA-KGRI-KLBF

Indianapolis, WFO IND

TWB226	KIND-KCHI
TWB309	KIND LCL VCNTY
TWBSYN	SYNOPSIS

Jacksonville, WFO JAX

TWB083	KVLD-KGNV-KOCF-KORL
TWB106	KJAX-KSAV

Key West, WFO EYW

TWB115	KMIA-KEYW

La Crosse, WFO ARX

TWB211	KMKE-KMSN-KLSE-KMSP
TWB218	KCHI-KRFD-KDBQ-KRST
TWB242	KMSP-KRST-KMCW

Las Vegas, WFO VEF

TWB397	KLAS-KEED
TWB405	KRNO-KTPH-KLAS
TWB427	KPMD-KIYK-KBIH
TWB428	KVCV-KDAG-KLAS

Little Rock, WFO LZK

TWB154	KLIT-KSGF

Los Angeles, WFO LOX

TWB426	TSP MTS-SOLEDAD-CAJON-BNG PASSES AND ADJ MTS
TWB430	KSMO-KOXR-KSBA
TWB431	KLAX BASIN
TWBLOX	SYNOPSIS

Lubbock, WFO LUB

TWB185	KAMA-KLBB-KMAF

Marquette, WFO MQT

TWB210	KCMX-KDLH

Medford, WFO MFR

TWB370	KMFR-KLMT-KLKV
TWB374	KAST-KOTH-KACV
TWB411	KRDD-KMFR
TWB412	KRDD-KLMT

Melbourne, WFO MLB

TWB081	KPBI-KVRB-KORL
TWB084	KJAX-KDAB-KMLB
TWB118	KTPA-KORL-KDAB

Miami, WFO MFL

TWB082	KMLB-KPBI-KMIA
TWB114	KMIA-MYGF-MYNN

Midland, WFO MAF

TWB187	KMAF-KELP
TWB194	KABQ-KROW-KMAF

Milwaukee, WFO MKX

TWB219	KCHI-KMKE
TWBSYN	SYNOPSIS

Minneapolis, WFO MPX

TWB214	KAUW-KEAU-KMSP

TWB296	KMSP LCL VCNTY
TWBSYN	SYNOPSIS

Missoula, WFO MSO

TWB336	KFCA-KMSO-KSMN
TWB338	KBTM-K3DU-KMSO-KS06-KGEG

Newport/Morehead City (NC), WFO MHX

TWB041	KILM-KEWN-KORF

New York City, WFO OKX

TWB019	KNYC-KBID-KACK

North Platte, WFO LBF

TWB098	KOFK-KVTN-KCDR
TWB264	KLBF-KBFF
TWB274	KDEN-KAKO-KLBF

Northern Indiana, WFO IWX

TWB308	KIND-KSBN

Omaha, WFO OAX

TWB099	KOMA-KOFK
TWB269	KMKC-KOMA
TWBSYN	SYNOPSIS

Paducah, WFO PAH

TWB232	KSTL-KCGI-KMEM
TWB236	KSGF-KCGI

Pendleton, WFO PDT

TWB355	KYKM-KPDT
TWB366	KPDT-KRDM
TWB368	KDLS-KRDM-KLKV

Philadelphia, WFO PHI

TWB025	KPHL LCL VCNTY
TWB033	KORF-KSBY-KPHL

Phoenix, WFO PSR

TWB396	KPHX-KPRC-KLAS
TWB425	SW AZ DESERTS KPHX-KEED SWD
TWB429	SRN CA DESERT KPSP-KEED SWD
TWBPSR	SYNOPSIS

Pittsburgh, WFO PBZ

TWB072	KCLE-KPIT-KHAR

TWB073	KPIT-KDCA

Pleasant Hill, WFO EAX

TWB238	KMKC-KIRK-KBRL
TWB294	KTUL-KCNU-KMKC
TWB295	KMKC LCL VCNTY

Pocatello, WFO PIH

TWB340	KIDA-KSMN
TWB343	KIDA-KJAC
TWB344	KPIH-KRKS
TWB345	KBOI-KBYI-KPIH-KIDA

Portland (ME), WFO GYX

TWB002	KPWM-KBTV
TWB006	KBOS-KPWM

Portland (OR), WFO PQR

TWB367	KPDX-KDLS-KPDT
TWB371	KRDM-KPDX
TWB372	KPDX-KEUG-KMFR
TWB373	KPDX-KAST
TWBPQR	SYNOPSIS

Pueblo, WFO PUB

TWB276	KDEN-KLHX-KGCK
TWB277	KDEN-KPUB-KTAD
TWB282	KGJT-KPUB
TWB284	KGCK-KTAD

Quad Cities, WFO DVN

TWB216	KCHI-KBRL
TWB217	KCHI-KMLI
TWB303	KMLI LCL VCNTY
TWB305	KCID LCL VCNTY

Rapid City, WFO UNR

TWB258	KRAP-KBFF
TWB259	KRAP-KGCC-KSHR
TWB260	KRAP-KBIS
TWB285	KRAP-KCPR
TWB315	KRAP-KPIR

Reno, WFO REV

TWB376	KBNO-KLKV-KRNO
TWB402	KRNO-KBIH
TWB403	KRNO-KBOI

TWBREV	SYNOPSIS

Riverton, WFO RIW

TWB288	KCPR-KRIW-KJAC
TWB290	KRKS-KBPI-KJAC
TWB291	KRKS-KRIW-KBIL
TWB311	KCPR-KRKS

Sacramento, WFO STO

TWB413	KRDD-KRNO
TWB415	KRDD-KCCR
TWB418	KCCR-KSAC-KRNO
TWB419	KCCR-KTPH
TWB424	KRDD-KSAC-KSCK

St. Louis, WFO LSX

TWB234	KSTL-KCOU-KMKC
TWBSYN	SYNOPSIS

Salt Lake City, WFO SLC

TWB312	KSLC-KVEL
TWB313	KRKS-KVEL-KPUC-KPGA
TWB380	KSLC-KOGD-KRKS
TWB381	KSLC-KPVU-KGJT
TWB382	KSLC-KMLF-KCDC-KLAS
TWB384	KSLC-KBYI
TWB385	KSLC-KMLD-KPIH
TWB386	KLAS-KBCE-KGJT
TWBSLC	SYNOPSIS

San Diego, WFO SGX

TWB432	KSNA-KSAN AND ADJ MTS

San Francisco Bay Area, WFO MTR

TWB417	KSFO-KOAK LCL VCNTY
TWB422	KSJC-KSBA
TWBMTR	SYNOPSIS

San Joaquin Valley, WFO HNX

TWB421	KSJC-KBFL
TWB423	KSCK-KFAT-KBFL

Seattle/Tacoma, WFO SEW

TWB357	KSEA-KPAE-KBIL
TWB358	PGTSND WITHIN 25NM RADIUS OF KSEA
TWB359	KSEA-KOLM-KPDX
TWB360	KOLM-KHQM-KAST

TWB361	KSEA-KSMP-KELN
TWBSEW	SYNOPSIS

Sioux Falls, WFO FSD

TWB243	KMSP-KRWF-KFSD
TWB302	KSUX LCL VCNTY
TWB316	KFSD-KPIR
TWBSYN	SYNOPSIS

Spokane, WFO OTX

TWB347	KBOI-KLWS-KGEG
TWB353	KGEG-KPDT
TWB354	KGEG-KELN

Springfield (MO), WFO SGF

TWB233	KSTL-KSGF
TWB237	KSGF-KMKC
TWB310	KSGF LCL VCNTY

Tallahassee, WFO TAE

TWB112	KJAX-KTLH
TWB117	KTPA-KCTY-KTLH

Tampa, WFO TBW

TWB116	KMIA-KFMY-KTPA

Topeka, WFO TOP

TWB267	KMKC-KICT
TWB317	KMKC-KSLN

Tucson, WFO TWC

TWB393	KPHX-KTUS-KDUG
TWB400	KTUS-KGBN

Tulsa, WFO TSA

TWB158	KOKC-KTUL-KSGF
TWB163	KTUL-KMLC-KDFW

Wichita, WFO ICT

TWB271	KICT-KRSL-KLBF
TWB300	KICT LCL VCNTY

Wilmington (OH), WFO ILN

TWB064	KCLE-KCMH-KCVG

Appendix B - TWEB Preparation

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1. TWEB Preparation. TWEBs are used primarily in recorded verbal communication. Therefore, forecasters must continually be aware of the difficulty listeners might have in visualizing the weather information described in a TWEB. TWEBs should be written clearly and concisely in an easy-to-understand style, and should be a maximum of six lines.

TWEBs should contain precise words, unambiguous phrases (those with clear and singular meanings), active verbs, and short sentences. Use of the word TO in front of a number should be avoided. A dash (-) will be voiced or spoken as BETWEEN (value) AND (value) (units) when used between numbers. For example, 1-1 1/2SM BR would be voiced as BETWEEN ONE AND ONE AND ONE HALF STATUTE MILES IN MIST.

1.1 Guidance and Coordination. TWEBs are prepared using a variety of guidance including TAFs, satellite, and radar data, as well as data provided by the National Centers for Environmental Prediction (NCEP). Forecast products prepared by the Aviation Weather Center (AWC), Storm Prediction Center (SPC), Center Weather Service Units (CWSU), Tropical Prediction Center (TPC), and especially the local and adjacent WFOs will be reviewed by the forecaster to ensure the TWEB contributes to a coordinated aviation forecast package. However, accuracy is the primary goal. Therefore, forecaster experience, expertise, analysis, and judgment must be applied to produce the best possible forecasts.

1.2 Time References. All time references will be stated in UTC. The Z abbreviation for UTC will be used in aviation products. When referencing midnight UTC, 0000Z will be used; 2400Z will be used only when a forecast period ends at midnight UTC. Time reference qualifiers BY, BETWEEN (BTWN), AFTER (AFT), THROUGH (THRU), and UNTIL (TIL) may be used, but because they are non-decisive, their use is not encouraged. Further, ambiguous time references such as SUNSET, BY END OF PD, or MORNING will not be used in route and vicinity forecasts.

1.3 Contractions. Only contractions from the FAA Contractions Handbook 7340.1 and the weather/obstruction to vision terms authorized in FMH No. 1 will be used in TWEBs. When more than one contraction is listed in 7340.1, the International Civil Aviation Organization (ICAO) contraction will be used. If there is no ICAO contraction, the NWS contraction will be used. Contractions for weather and obstructions to vision not authorized for NWS METARs and TAFs will not be used in TWEBs (i.e., CAVOK, CAVU, etc.).

Authorized contractions which are ambiguous or subject to misinterpretation will not be used. For example, NE could mean northeast or Nebraska. The direction contraction used in this case should be NEWD or NERN. The terms Otherwise (OTRW), Rest of Route (REST OF RTE), Elsewhere (ELSW), and Remainder of Route (RMNDR of RTE) are ambiguous references to time and/or space and will not be used. Route segments will be clearly defined using references to anchor-points or other identifiers along the route (i.e., KPLN-KTVC, KCHI-50W KCHI, etc).

The accurate translation of TWEBs by automated dissemination systems, particularly computer generated voice systems, is dependent upon correctly spelled terms and contractions.

1.4 Communications and Format. Communications procedures for NWS headings are maintained in NWS Advanced Weather Interactive Processing System (AWIPS) procedures documentation. All TWEBs will be disseminated long line.

Each TWEB will be started on the line immediately following the previous product with the location identifier at the left margin. The second and subsequent lines of each TWEB will be indented four spaces to enhance visual scanning of the route number.

2. Product Content. The content of TWEBs will be arranged in a logical sequence of information both spatially and temporally. This sequence will be LOCATION, TIME, and CONDITION, and each group will end with a period (.). If the weather is expected to change with time along the route or route segments, then three periods (...) are used to separate time periods; i.e., LOCATION, TIME, CONDITION...TIME, CONDITION, etc. (see example below). Additionally, location identifiers within the 50 nm wide route corridor not listed in the TWEB header may be used in the text to delimit conditions and/or phenomena. All required conditions will be repeated in each time segment because the TWEB is a readable product. This ensures the reader, usually FSS, does not have to search for the original condition mentioned previously in the TWEB.
Example:

033 TWEB 080214 KORF-KSBY-KPHL. ALL HGTS AGL EXC TOPS. KORF-KSBY
P6SM SKC...10Z 3-4SM HZ SCT040 TOPS 050-070. KSBY-KPHL 1 1/2-2SM BR

CIGS OVC004-008...11Z 3-4SM HZ BKN012 TOPS 040-050.

If one or more conditions apply to the entire route, while other conditions along the route vary, then the route-wide conditions may be stated first followed by the segments and their associated conditions (see example below).

Example:

013 TWEB 102008 KBTV-KMSS-KART-KSYR. ALL HGTS AGL EXC TOPS. SFC WND 34030KT. KBTV-KART 3SM -SHSN BKN040 TOPS 060-080. KART-KSYR 0-1/2SM +SHSN CIGS OVC005-009.

The authorized conditional terms for describing clouds, visibility, and/or weather will be limited to those defined below. Only one conditional term will be used to describe any particular condition (see examples below).

a. ISOLD (isolated) - single cells or localized conditions (no percentage). Implies ability to circumnavigate.

b. WDLY SCT (widely scattered) - Less Than (LT) 25 percent of area/route affected. Use with convective activity.

c. LCL (local or locally) - LT 25 percent of area/route affected. Use to forecast non-convective weather and restrictions to visibility.

d. SCT (scattered) - Greater Than or Equal to (GTE) 25 to Less than or Equal to (LTE) 54 percent of area/route affected. Use with convective activity.

e. AREA(S) - GTE 25 to LTE 54 percent of area/route affected. Use to forecast non-convective weather and restrictions to visibility.

f. NMRS (numerous) - Greater Than (GT) 54 percent of area/route affected. Use with convective activity.

g. WDSPR (widespread) - GT 54 percent of area/route affected. Use to forecast non-convective weather and restrictions to visibility.

Examples:

278 TWEB 100214 KDEN-KEGE-KGJT. ALL HGTS MSL EXC CIGS. KDEN-40W KEGE MTS OBSC 3-4SM -SN BR CIGS OVC020-030 AREAS 1/2SM SN CIGS OVC002-006. 40W KEGE-KGJT P6SM SCT-BKN100-120 AREAS MTS OBSC BKN080-100 WDLY SCT 4-5SM -SHSN BR CIGS OVC020-030.

232 TWEB 030214 KSTL-KCGI-KMEM. ALL HGTS AGL EXC TOPS. KSTL-KCGI P6SM OVC040...06Z P6SM OVC040 AREAS BLW 3SM BR OVC010 TOPS 100-120...10Z P6SM OVC040 LCL 1SM -TSRA BR BKN010 OVC020CB.

KCGI-KMEM P6SM SCT-BKN011-016...08Z WDSPR 1-1 1/2SM BR CIGS OVC005-009.

2.1 TWEB Route and Local Vicinity Forecasts. Route and Local Vicinity forecasts will include specific information listed in sections 2.1.1 to 2.1.6. Cloud tops should also be included, following sky condition, when expected to be below 15,000 feet MSL and the associated cloud amount is FEW, SCT, or BKN. Forecast elements should be in the order listed above. However, forecasters may deviate from that order to highlight the most significant weather elements by presenting those elements first.

2.1.1 Surface Wind. Mean sustained surface wind will be included whenever it is forecast to be GTE 25 knots (e.g., SFC WND 32025G35KT). Wind gusts associated with thunderstorms may also be included (e.g., SFC WND G40KT).

2.1.2 Surface Visibility. Surface visibility (including ranges of values as necessary) will always be included in TWEBs using the following values. NOTE: Care should be taken when using ranges of visibility to avoid crossing categories in the TWEB, i.e., IFR-MVFR, or IFR-VFR, etc.

Visibility (SM)	Forecast Values (SM)	Allowable Increment (Range)
LT 3	0, ½, 1, 1 ½, 2, 2 ½, or BLW 3	½-mile increments or BLW 3
3 - 6 inclusive	3, 4, 5, or 6	1-mile increments
GT 6	P6SM	Not applicable

2.1.3 Weather and Obstructions to Vision. Whenever thunderstorms or volcanic ash are expected, they will be included in the TWEBs regardless of the forecast visibility (this includes adding CB after the cloud height). If visibility LTE 6SM is forecast, obstructions to vision and/or weather will be included immediately following the visibility. Use abbreviations contained in FMH No. 1 for weather/obstructions. Remember, thunderstorms imply LLWS.

2.1.4 Sky Condition. Forecasters will determine the appropriate reference plane to use in describing cloud bases and will precede the product text with one of the following statements: ALL HGTS MSL EXC CIGS or ALL HGTS AGL EXC TOPS. The reference plane for cloud heights will always be stated as MSL or AGL (CIGS or BASES). Use of AGL, CIGS, and BASES should be limited to describing cloud layers with bases within 4,000 feet of the ground. Care should be taken when using ALL HGTS AGL EXC TOPS in mountainous areas to ensure that the heights given are representative of actual cloud heights above the ground along the route corridor.

The height of the lowest cloud layer base where the cumulative forecast of clouds obscures more than one-half of the sky constitutes a ceiling. Ceilings may be identified at the beginning of the sky condition group by the contraction CIGS (e.g., CIGS OVC005-007). Cloud cover and ceiling determination will be stated without regard to opaqueness. When cloud cover does not constitute a ceiling, the term BASES may precede the sky condition group (e.g., BASES

FEW005). The bases of sky-covering or obscuring phenomena aloft (smoke, dust, etc.) may also be included in forecasts (e.g., FU BASES SCT005 TOPS 015).

NOTE: Care should be taken to avoid crossing ceiling categories, i.e ., VFR-MVFR, or VFR-IFR, etc .

The height of cloud bases or tops along the forecast route may be expressed as a range of values or as a single value if heights are expected to be uniform (e.g., BKN020 TOPS 045, BKN003-005, or BKN010 TOPS 020-025). Cloud bases and tops heights will be forecast in hundreds of feet using the following value or range increments:

Cloud Bases and Tops

Cloud Heights (feet)	Forecast Value (100s of feet)	Forecast Value/Range Increments (feet)
LTE 1,000	000, 001, 002...010 BLW BKN010 BLW OVC010	Values - BLW BKN010 (OVC010) or 100 foot increment/Ranges - 200 - 400 foot increments
GT 1,000 - LTE 3,000	011, 012, 013...029, 030	100 foot increments/Ranges 500 to 1000 (bases or tops)
GT 3,000 - LTE 5,000	035, 040, 045, 050	500 foot increments/Ranges 500 or 1000 (bases or tops)
GT 5,000 - LTE 15,000	060, 070...140, 150	1,000 foot increments/Ranges 1,000 or 2,000 (bases or tops)
GT 15,000	200, 250, 300	5,000 (bases)

Cloud bases should be forecast at all heights, using forecaster judgment and keeping terrain in mind. For example, high-based thunderstorms may be significant to a pilot in the west but may not be significant to a pilot in other parts of the country. Cumulonimbus (CB) clouds will be specifically mentioned when thunderstorm activity is expected.

Cloud cover along a route or over a local area will be described using the standard observation contractions and definitions found in FMH No. 1; i.e., CLEAR (SKC), FEW (FEW), SCATTERED (SCT), BROKEN (BKN), OVERCAST (OVC), or Vertical Visibility (VV) into a total surface obscuration. These terms may be used singly or in appropriate combinations (e.g., SKC, SCT-BKN040 or BKN-OVC030). However, forecasters should be aware that such combinations may reduce the usefulness of their products. For example, generic use of variability, such as SCT-BKN010 means cloud cover is forecasted to vary from 3/8 to 7/8. Such a forecast, if not accompanied by spatial or temporal trend information makes pre-flight decisions very difficult. SCT010 EXC BKN010 ALG ERN SLOPES OF MTS is a much more useful forecast and is strongly encouraged. The contraction CLR BLW 120 may be used from automated stations if the forecaster is reasonably sure that the observations are representative of

the route or route segment. Other examples of ceiling descriptors can include: CIG BLW BKN010 and AOA BKN120.

When appropriate, include statements such as MTS OBSC ABV 070, MT RDGS OBSC, or ALL PASSES OBSC. Geographic features may be specified (e.g., CASCDS or MTS).

2.1.5 Cloud Tops. Forecasters are strongly encouraged to include cloud tops when they are forecasted below 15,000 feet MSL. In addition to PIREPS, satellite and WSR-88D data are good sources for cloud top information. Cloud top heights (always MSL) can be stated as a single value or in ranges (see table in previous section). When the vertical clearance between layers is LT 1,500 feet, only the top of the highest layer should be included with a statement such as MEGG LYRS BLW BKN150. Tops of well defined obscurations aloft or obstructions to vision (smoke, haze, etc.) may also be included in forecasts.

2.1.6 Low Level Wind Shear (LLWS). When the TAF for a TWEB route anchor-point or local vicinity TWEB center-point includes a forecast of non-convective LLWS conditions, those conditions will be included in the TWEB text with appropriate coverage information if available. If conditions are expected to be isolated or confined to the vicinity of the anchor-point airport, NR (NEAR) and the TAF location identifier will be entered. If the conditions are expected to be more widespread, or in a well-defined area not near a TAF location, the expected extent of the coverage should be defined in the TWEB text.

2.1.7 Information Not Contained in TWEBs. Icing and turbulence information will not be included in TWEBs. This information is gathered by AFSS personnel from Area Forecasts (FA), AIRMETs, SIGMETs, and/or Center Weather Advisories (CWA) for insertion in the broadcast.

2.2 Synopsis. The TWEB synopsis is a brief description of the location, character, and movement of fronts, pressure systems, and air flow which will affect TWEB routes and any area assigned to the issuing NWS office during the valid period of the TWEB. It should be based on the FAs, NCEP model output, and any other data judged appropriate by the forecaster. An outlook period may be included in the synopsis if there is a request for additional information in the synopsis. Since TWEBs are issued two hours after TAFs, the outlook period, if used, should be for ten (10) hours in order to coincide with the end of the TAF valid time.

Examples:

SEA SYNS 120820 STNR UPR LVL TROF JUST OFSHR PAC NW CST WL
MAINTAIN MOIST SW FLOW ALF BYD 20Z. WK CDFNT 50W OF WA
CST AT 08Z WL RCH CASCDS 12Z THEN DSIPT 14Z-18Z. MOIST/UNSTBL
AMS WL CONT WRN WA IN LOW LVL ONSHR FLOW BHD CDFNT. PGTSND
CONVERGENCE ZONE FRMG NR KPAE AFT 12Z. OTLK VALID 122000Z TIL
130600Z (text)...

OMA SYNS 111402 STG UPR LVL LOW OVR NWRN NE WL MOV SLWLY NEWD
THRU 02Z. NMRS SEV TS AT 14Z THRU CNTRL NE INTO NWRN KS WL
MOV RPDLY EWD TO ERN NE/ERN KS BY 00Z. AMS VERY UNSTBL. CDFNT
FM UPR LVL LOW KVTN-KGLD-KAMA WL MOV TO NR KPIR-KTOP-KDFW

BY 00Z.

2.2.1 Synopsis Issuance. TWEB synopses are prepared where required. Where the synopsis is not listed, there is no requirement. The requirement for issuing synopses may be reviewed periodically by OCWWS, NWSH after discussion with each RH. If, after coordination with the customers and the FAA, it is determined that a synopsis is no longer needed, OCWWS may choose to discontinue it. If an NWS office transfers or eliminates its TWEB route responsibility, and that office issued a synopsis, then the synopsis will also be transferred or eliminated.

3. Route Forecast Abbreviation or Suspension. Minimum requirements for route forecasts are less defined than those for TAFs, even though most route forecasts are anchored at observational sites for which TAFs are prepared. Therefore, when observation elements and/or entire observations are not available, the decision to issue, abbreviate, or suspend the affected route forecast will be made by the duty forecaster using the total observation concept (see NWSI 10-813, Section 5.2) and employing their best judgment.

3.1 Procedures. If a forecaster determines a TWEB forecast should be suspended due to missing observations, then a NIL TWEB will be issued (see examples below).

Example:

315 TWEB AMD 012308 2245Z KRAP-KPIR. NIL TWEB.

When a TWEB route is abbreviated because of missing observation data or suspension of a TAF, an amendment will be issued with the statement "Kxxx-Kxxx NOT AVBL" appended to the end of the text (see examples below). Forecasters can maintain a TWEB if observational data ceases at a site until the forecaster determines that TWEB is no longer representative.

Examples:

383 TWEB AMD 172108 2110Z KSLC-KENV-KEKO. ALL HGTS MSL EXC CIGS. KSLC-KENV P6SM BKN100 SCT 1 1/2SM -SHSN WITH MTS LCL OBSC.
KENV-KEKO NOT AVBL. (KEKO TAF not available)

261 TWEB AMD 172108 2115Z KOMA-KGRI-KLBF. ALL HGTS MSL EXC CIGS. 50W KOMA-KGRI-KLBF 1-1 1/2SM -FZDZ CIGS OVC020-030. KOMA-50W KOMA NOT AVBL.

NOTE: For part time stations, a statement such as (HH)Z NIL AMD may be appended to the end of the TWEB (see example below).

Example:

041 TWEB 122008 KILM-KEWN-KORF. ALL HGTS MSL EXC CIGS. P6SM BKN080CB SCT 3-4SM -TSRA...00Z P6SM OVC020-025. 02Z NIL AMD.

If additional information makes a TWEB for the complete route possible prior to the next scheduled issuance, the product should be issued as an amendment to the previous scheduled issuance.

When a TWEB cannot be issued, use NIL TWEB. When the information becomes available, issue an amendment.

4. Issuance Times and Valid Periods.

4.1 Scheduled Text Products. Scheduled TWEBs covering the CONUS will be prepared four times a day. Issuance time, valid period, and transmission period are listed in UTC as follows:

Issuance Time (UCT)	Valid Period (UTC)	Transmission Period (UTC)
0200	0200 - 1400	0120 - 0140
0800	0800 - 2000	0720 - 0740
1400	1400 - 0200	1320 - 1340
2000	2000 - 0800	1920 - 1940

4.2 Unscheduled Text Products. Unscheduled TWEBs are issued when needed as an amended (AMD), corrected (COR), or corrected amended (COR AMD) TWEB. NOTE: the Advanced Weather Interactive Processing System (AWIPS) header follows standard NWS procedures. Unscheduled TWEBs will contain all the elements of a regularly scheduled TWEB issuance. Valid periods begin the hour of issuance if the time is earlier than H+30, or the hour after issuance if the time is H+30 or later. Valid periods will always end at the same time as the end of the current scheduled valid period. Additionally, the UTC of issuance will follow the revised valid period. When issued, forgo expired portions or references to weather occurring before issuance time. Only the current or expected conditions will be detailed.

Example:

164 TWEB COR 010214 0205Z KICT-KAMA. text...
346 TWEB AMD 011702 1635Z KBOI-KEKO. text...
431 TWEB COR AMD 120108 0045Z LAX BASIN. text...

5. Amendments. TWEBs should be amended when observed conditions meet minimum amendment criteria and when trends towards conditions make a TWEB forecast erroneous or unrepresentative. For example, if the forecast is for clear skies with valley fog developing after 10Z and a middle cloud deck moves in which will prevent cooling and fog formation, the forecast should be amended as soon as possible. Specific minimum amendment criteria follow:

TWEB Amendment Criteria*

If the forecast is:	Amend if:
No Ceiling or Ceiling GT 3,000 feet AGL	In the forecaster's judgment, the ceiling is unrepresentative or decreases to LTE 3,000 feet
Ceiling greater than or equal to (GTE) 2,000 - LTE 3,000 feet AGL	Ceiling increases to GT 3,000 feet AGL or decreases to LT 2,000 feet AGL
Ceiling GTE 1,000 to LT 2,000 feet AGL	Ceiling increases to GTE 2,000 feet AGL or decreases to LT 1,000 feet AGL
Ceiling LT 1,000 feet AGL	Ceiling increases to GTE 1,000 feet AGL
Visibility GT 5 SM	In the forecaster’s judgment, visibility is unrepresentative or decreases to LTE 5 SM
Visibility GTE 3 to LTE 5 SM	Visibility increases to GT 5 or decreases to LT 3 SM
Visibility LT 3 SM	Visibility increases to GTE 3 SM
No Thunderstorms	Thunderstorms are expected to occur
Thunderstorms	No Thunderstorms are expected to occur
Non-convective Low Level Wind Shear (LLWS) is not forecast	Non-convective LLWS is expected to occur
Non-convective LLWS	Non-convective LLWS is no longer expected to occur

* Note: Although there are no amendment criteria below 1000 feet and 3 SM, forecasters are encouraged to forecast lower conditions as specifically as possible.